

REMARKS

A petition for a two month extension of time has today been filed as separate paper and a copy is attached hereto.

The undersigned wishes to thank Examiners Nguyen and Kopec for their time and courtesy in the telephone interview of December 3, 2007. On November 16, 2007 the undersigned sent a facsimile memo to Mr. Nguyen (attachment #1 here) outlining the topics he wished to cover in the telephone interview. Attachment #2 here is the Examiner's proposal, based on the discussion of the interview and the Examiner's subsequent review, which is adopted in the present amendments. In claim 1 here the phrases added in the Examiner's suggestion have been reversed to clarify that it is the "single material" not the "inorganic electron conductor portions" that "comprises" or is "made of" "carbonaceous material and inorganic proton conductor portions." If the Examiner prefers, he is hereby authorized to substitute "made of" for "comprising". In claim 8 the Examiner's wording "said material" has been substituted by "organic precursor", consistent with the language suggested for claim 1, because the antecedent for "said material" would be the "single material produced by pyrolysis", i.e. the product, not the material ("organic precursor") which is carbonized.

The rejection of claims 1-11 and 19-25 for anticipation by Vanderborgh et al is respectfully traversed. Vanderborgh et al disclose a "composite electrode" which "has means for conducting ions, means for conducting electrons, and an electrocatalyst." See column 3, lines 64-66. The "means for conducting ions" is described as an ion exchange polymer, phosphoric acid or "certain metal oxides". See, for example, column 5, lines 14-30; column 5, line 45 to column 6, line 3, and column 6, lines 19-24. During the telephone interview Examiner Kopec suggested that there might be "inherent" covalent bonding between the electron conducting materials and the proton conducting materials. However, the electrodes of Vanderborgh et al are merely physical admixtures of the electron conducting materials and the proton conducting materials, which materials are not pyrolyzed together. There is no disclosure of a "single material" or "compound" which has both electron and proton conducting

portions. The layers described at column 8, lines 16-20 and column 9, lines 10-46 are characterized as "mixtures" of carbon black and an ion exchange polymer. The embodiment described at column 10, lines 24-33 is a woven cloth of fibers of ion exchange polymer and heat treated carbon fibers. Layer 48 (column 10, lines 58-62) is a graphite cloth loaded with ion exchange polymer and platinum. It is not at all clear that covalent bonding or other than physical bonding would occur in any of those embodiments. Further, the composite electrode itself is not a product of pyrolysis.

The rejection of method claims 12-18 over Chen et al is also traversed. Chen et al produce "A multiphase solid electrolyte ion transport membrane comprising two phases wherein one of the phases comprises an oxygen ion single conductive material," quoting from the abstract. "The precursor decomposes at high temperatures, leaving a uniform coating of second phase on the solid electrolyte," quoting from column 7, lines 52-54. No phase other than the "first phase" and the "second phase" is mentioned. The first phase is a mixed metal conducting oxide ceramic, e.g. perovskite, with "a second phase of a metal or metal oxide distributed uniformly on the surface," quoting from column 8, lines 62-66. Regarding the ceramic of the first phase, see column 7, line 55 to column 8, line 66. Thus, neither phase of Chin et al is derived from a polymerized hydrocarbon (or other polymer) by pyrolysis.

Responsive to the rejection for double patenting, a terminal disclaimer is submitted herewith.

Reconsideration of the rejections of record is respectfully requested in light of the present amendments adopting the Examiner's suggestions and the foregoing comments.

Respectfully submitted,
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